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# On the Evolution of Life From Fire.

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Life was evolved from Fire by  
the operation of a Natural Law.  
Fire and Life are synonymous  
terms for a mode of motion  
which progresses by feeding on  
and changing matter from one  
state to another.

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WELLINGTON,  
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1913.

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## INTRODUCTION.

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*In preparing my pamphlet I have consulted many authorities; but my reading has extended over a number of years, and has embraced the works of Hugh Miller, Darwin, Professors Tyndall, Huxley, Haeckel and Bergson: besides the very instructive articles on the subject in the Encyclopaedia Britannica (1911 edition).*

*When I was a boy at school in 1876, "Footprints of the Creator" was given to me as a prize for "Knowledge of Scripture," and the reading of that book first gave me the desire for more knowledge of the problems of life. Thus, it will be seen, that I have not been hasty in coming to a decision.*

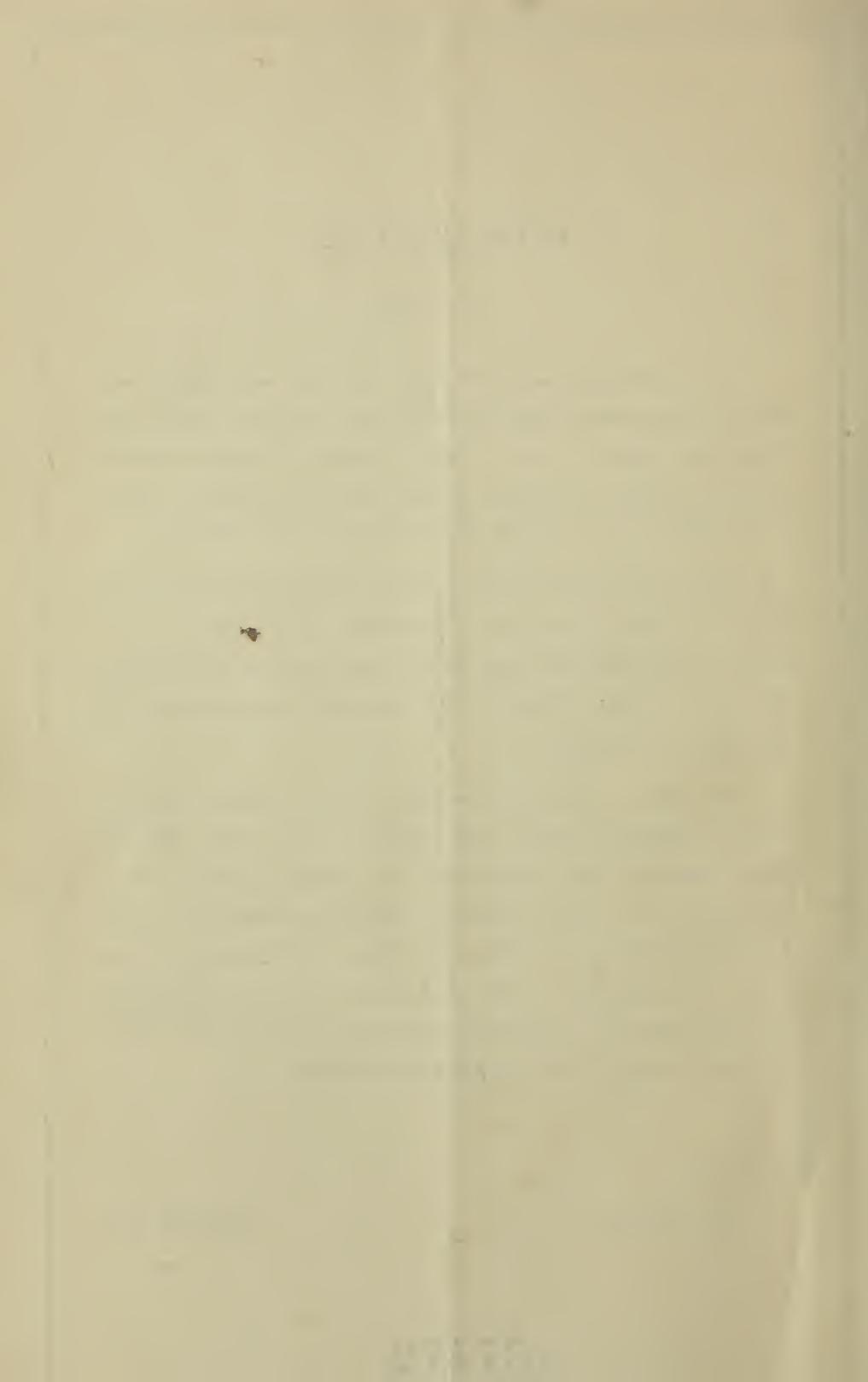
*But while I am fully conscious of my own imperfections as a writer on scientific subjects, and recognise many of the difficulties of my theory, yet I am convinced that it is based on truth. If my readers will work out the problem in their own minds they cannot help seeing that it is something more than mere coincidence which makes the movements of Fire and Life so similar; although, at first, they may not be prepared to accept the conclusion, that Life is the refined energy of Fire, produced by Evolution.*

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Wellington,

New Zealand.

January, 1913.



## Evolution of Life from Fire

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**Life was evolved from Fire by the operation of a Natural Law.**

**Fire and Life are synonymous terms for a mode of motion which progresses by feeding on and changing Matter from one state to another.**

**N.B.—“Food”:** Something that sustains, nourishes, and augments.

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When we take such a seed as a grain of wheat into our hands we can see nothing to make us believe that there is life therein. Any opinions we may have on the subject are the result of our experience; and if we wish the seed to grow, we place it under such conditions as will supply the proper amounts of Heat, Light, Air, and Moisture. Our experience has led us to believe that there is within that seed both Life and Food; but the Life is not active, nor will it move in any way to eat the food unless we allow Heat to start it.

In this respect the grain of wheat may be compared to the material gathered together for making a fire. This material contains most of what the fire wants in order that it may burn, and also the potential energy necessary for making it do so; but unless we first start it by applying fire, it will remain inactive. Even when we have started the fire, it will remain in the one place unless it can find more material to catch hold of. Failing that, it gradually dies away. But a spark thrown out by the fire may catch hold of some material at a considerable distance away, and thus create a new fire.

We notice a similar condition of affairs when we apply Heat to the newly-planted seed. The Life of the seed is thereby set in motion: the nucleus of the seed feeds on the other portion until roots are formed: the plant then gathers its food from surrounding material, and in the form of seed more life is produced.

Although opposed by external forces, such as the removal of the grain by birds, some of the seed will fall to the ground, take root and grow; and so on, until the supply of food is exhausted. But if only one grain is carried a considerable distance away from the parent plant, and is enabled to meet with favourable conditions, it will there create new life, just as the spark from the fire created new fire.

I use the word "create" in both these illustrations in the popular sense. As a matter of fact, neither fire nor life, as far as we know, is created at the present time.

Now, if we take a hen's egg which has been fertilized, we notice a different way of producing life. It is not necessary in this case to supply light, air, or moisture, to make the seed swell, but we must supply Heat to start the germ into life. The spark of life is present in the hen's egg, just as it was in the grain of wheat, but unless Heat is applied the germ will not grow.

Suppose now, we gather together the materials for making a bottle of yeast. We fill the bottle up to the top of the neck, but the material is a long time starting to work. If we now take a little yeast, and put it in the bottle, the whole of the material starts to work, and yeast is formed rapidly. In this case we have brought life to the material, and that life was formed under conditions produced by Heat.

We notice that the lowest forms of life, both vegetable and animal, are absolutely dependent on Heat to start them into life. It is true they sometimes live in very low temperatures; but it is well known that life is more prolific in warm climates than it is in cold. In warm climates organisms arrive more quickly at maturity than they do in cold. Contagious diseases, too, are far more prevalent in the heat of summer than they are in the cold of winter. The reproduc-

tive instinct also is practically ruled by Heat, and nearly all plants and most animals have this instinct aroused as soon as the weather becomes warm.

We arrive, therefore, at the conclusion that Heat supplies the energy necessary to start Life from Life, and also to carry on Life when separated from the parent substance.

## II.

Life having been started, food becomes absolutely necessary to build up the structure of the organism, and to restore waste or loss of Heat caused by work.

In the lowest forms of life the food may be found wholly in water: in other forms the air itself sustains life for some considerable time. But the lowest forms of vegetable life have the power of feeding on inorganic matter. In this way they themselves become food for higher forms; and these again form the food of animals, which in time become the food of man. The power which enables vegetable organisms to feed on inorganic matter is, primarily, supplied by the vital energy which was implanted in them in the fertilization of the seed; and this vital energy is the same in both vegetable and animal organisms.

Now, all the food provided in this chain of life is prepared under and by the direct action of Heat. The whole of the energy used in raising up the plant, which the animal eats down, with the exception of the small quantity stored up in the seed, is provided by Heat, acquired after germination. The simplest vegetable organism is really a motor which has the power of feeding on surrounding matter, thereby increasing its power to do useful work; and this it does from the moment it begins to exist until the time of its death. Not only does it do this, but during the short course of its life it reproduces other organisms which also possess the same power.

It is therefore apparent that the vital energy is inherent in the organism, and can be transmitted to the germ produced by it: but it is at the same time obvious that this could

not take place without Heat; the amount of heat necessary being proportional to the energy required for the purpose of starting that germ on a life, which must of necessity cease when it no longer has the power of feeding, and by so doing, performing its life-work.

I propose to show that Life is energy derived from Fire. The germ contains merely the spark of fire: all the heat required to sustain and enable the organism to carry on its life-work is acquired in the process of living: the spark is merely the starting point of the fire which progresses until it is arrested by external forces. Nevertheless the energy stored up in the spark must be taken into account. There are sparks with little energy in them, and there are sparks full of energy. Some have the concentrated energy of years, as in the spermatozoon of a mammal; and some have merely sufficient energy to produce ephemeral life. This difference is of course the result of Evolution, and is accounted for on Darwin's theory of the Origin of Species by means of Natural Selection.

### III.

#### REPRODUCTION.

This brings us to the question of Reproduction. On my theory Reproduction is simply the result of a Natural Law which compels Life to progress by feeding on and changing Matter from one state to another. Fire progresses by changing Matter into simple elements. Life, by the action of Heat, converts simple elements into complex structures; but it is Heat which supplies the motive power. Fire grows and spreads by what it feeds on: Life, by the action of Heat, also grows and spreads by what it feeds on. The progress of either Fire or Life is limited by the quantity of food available. If the quantity of food is large and easily digested, either Fire or Life will progress rapidly. If the quantity is small, the progress will be small.

**Progress therefore is a necessity: to stop means Death.**

Fire progresses by the separation of Matter; and this, too, is exactly how Life progresses. Fire separates Matter into very small particles: the fact that Life may separate Matter into larger and more complex structures is the natural and inevitable result of Evolution.

In the simplest organism Reproduction is merely a division of the cell: in the highest the process is far more complicated.

I shall deal with the highest organisms first, because, in returning to the simplest, I propose to suggest how and why Life was evolved from Fire.

In the highest organisms there is a division of labour. The male organism produces the energy: the female organism the food. In the male organism the spermatozoa are produced by the action of an abnormal degree of heat.

If we could follow the process back to the origin of their production in the male organism we should probably find that the male exists for and is employed solely, in a physical sense, in the manufacture of spermatozoa; and the higher the male is in the scale of intelligence the more refined will be the spermatozoa. Each spermatozoon contains the energy of life, and the whole of its movements are made for the purpose of getting Food.

The production of myriads of spermatozoa leads to exactly the same results as are observed in a hive of bees. When the number of bees has increased out of all proportion to the size of the hive, the pressure upon the means of subsistence becomes so great that a "flight" is absolutely necessary in order that the young bees may find food in another place. The hive is only too pleased to get rid of them because they are in the way, and the reproductive instinct is always present.

On the other hand the female organism is made for the production of living food: in the first place just exactly the kind of food the spermatozoon first wants, and in the second place, the kind of food and structure necessary for the development and protection of the embryo. The ovum of the female contains the living food which the spermatozoon requires, in the same way as a fertilised hen's egg contains the nutriment

required by the germ of the chicken. It must also be carefully remembered that the spermatozoon and the ovum have descended from a common ancestor, thus preserving the characteristics of that ancestor as exhibited by both the male and the female.

The conditions, therefore, being favourable, the spermatozoa are borne along like a shoal of minute fishes in close proximity to the ovum. Now ensues a fierce race and struggle between the spermatozoa for the privilege of entering the ovum and eating the coveted food. It is a case of the survival of the fittest, and the strongest or most cunning one is alone successful.

With the coalescing of the spermatozoon and the ovum there begins a repetition of what has been observed in the lowest organisms, viz., the division of the cell, or fertilized ovum; the female meanwhile continuing to find all the food necessary for the embryo until the time of birth. By this time the pressure of the embryo on the means of subsistence has become so great that the female organism is no longer able to support it in that way, and the necessity has arisen for it to be fed in some other place and by some other means.

Now, if we accept the teachings of Science that all life springs from the cell, we can return to a point which brings us to the lowest form of life, a unicellular organism. This, which is simply a microscopic mass of protoplasm, contains one solid particle, the nucleus. The cell has the power of movement, and it increases by the simple process of cleavage; i.e., the whole cell splits into two cells, each of which possesses all the characteristics of the parent cell.

We saw in the case of the highest organisms that energy was supplied by the male, and food by the female; and the union of energy and food produced more life; but in the case of the unicellular organism the energy and the food are combined so closely, that even with the most powerful microscope they cannot be distinguished separately. We know that the energy is there, we know that the food is there; but how they work together for the common good it has been considered, so far, impossible to state. We see the result of their labour

in the reproduction of the cell; but how the nucleus is formed, we have not yet been able to find out. We can, however, reason from the known to the unknown; and it is not improbable that if our reason travel along the proper channels, we shall at length come to the source.

#### IV.

We have seen how all organisms are developed by the action of Heat, and we have noted how necessary heat is to the reproduction of every organism. The conclusion, therefore, that nothing could live without heat is sufficiently obvious. We know the destructive property of Fire, because we have evidence of it almost every day; and we know also that Heat can be converted into Motion, and so become constructive. We have seen how Reproduction is simply the separation of Matter, complex, it is true, but not the less Matter. We have seen how Reproduction is produced by a Mode of Motion which progresses by what it feeds on, and that the motive power is always the same, viz., the conversion of Heat into Motion. We have seen, also, how Fire is a Mode of Motion which progresses by the separation of Matter, and that the more it has to feed on the faster it increases.

Bearing all this in mind, we may infer: That as the motive power which for countless ages has caused Matter to produce and reproduce protoplasm, is Heat, which originally came from Solar Fire, so the motive power which caused Matter to produce the first protoplasm originally came from Solar Fire.

The way of starting Fire and Life on their struggle for Food is the same: they live on Food: they increase by changing it from one state to another: and they die for want of it, or because they cannot digest it. The fierce energy of the Fire which formerly consumed our planet became the gentle energy of Life, and as the former retreated, the latter, fed by the Sun, advanced by the line of least resistance.

Let me illustrate the matter in another way. A prospective mother nourishes the embryo through the placenta;

but as soon as the child is born she feeds it on the breast. The source of the supply and the motive power which keeps up the supply are the same, but the way of supplying the food is different.

On my theory this is how the evolution of Life from Fire was brought about.

While the energy of life was in embryo, it existed in and was nourished by the dying flame of our cooling planet; but as soon as it had parted from the flame it was nursed in a different way, viz., by Heat radiating from the Sun. The source of the supply, and the motive power which kept up the supply, were the same; but the way of supplying the Heat was different. But this supply would soon be exhausted unless enough could be gathered together for the energy to retain heat when the face of the earth was turned away from the Sun.

All the elements of protoplasm—dust, gases, and moisture—would at that time be contained in the atmosphere; although condensation and the force of gravity would in time bring them to the earth, and the energy would gather to itself and feed on that which was most easily assimilated. As it fed it would reproduce by separation of energized Matter, and as it reproduced it would change. Just as a baby passes from milk to harder foods, so the baby energy of Life when it reached the water or the decaying rock would begin to feed on something soluble in water as well as gases, and it would then appear in a low form of vegetable life. And just as heat is distributed through Matter, so every portion of the protoplasm would be energized and partake of the life of the whole.

The above, of course, will be apparent to anyone who understands the nature of Heat and the Conservation of Energy.

Now, as the conditions must have been favourable, reproduction must have been rapid. The risk, therefore, of life being totally lost must have been small, and it is extremely probable that there was only one Creation of Life, and that it has continued uninterruptedly from that time to this.

But as the conditions which produced Life from Fire would begin at the Poles and end at the Equator, in all probability Life was produced all over the world for some considerable time. Hence it follows that if the conditions were the same all over the world, Evolution for some considerable time would be on similar lines, and all the differences which now exist are the results of Evolution which has taken place since that time. As the conditions changed the changes produced by Evolution would become more marked, and life at the Poles would be different from life at the Equator.

## V.

### CONCLUSION.

If my theory be correct, much of the mystery surrounding the Origin of Life will be removed, and men's minds will be set free to grapple with other problems. I shall not attempt to deny that Life may be produced in other ways: I have merely indicated the way in which I believe it was first produced, and I have attempted by direct language and illustration to demonstrate the truth of my belief.

Two classes of people will absolutely refuse to believe that there is any truth at all in my theory. First, an educated class which has fixed opinions; and second, an uneducated class, which either cannot or will not think. But I have sufficient confidence in a third class, the members of which will approach the subject with open minds, and will weigh the evidence for or against; accepting this and rejecting that, until the truth alone is revealed to them. It is they who will be able to view both sides of the question with impartiality; and so soon as they begin to range themselves on my side I feel confident that the success of my theory will be assured.

The Church, indeed, should welcome my theory, for it narrows the question of Creation down to a First Cause. The Creator who made this planet made the Universe, and the workings of the Universe have made it possible for man's

brain to understand many things now which were not revealed to our forefathers. If our reasoning take us back from one stage to another so that we may come face to face with the Creator, is not that what the Church is trying to teach? When we try to teach a child we appeal to its senses, but when we try to teach a man we appeal to his reason. Much more would the Creator appeal to man's reason, in order that man might learn the meaning and nature of all things.

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The result of my argument may be summed up as follows:—Fire is a powerful mode of motion, feeding on Matter, which it separates, but neither creates nor destroys.

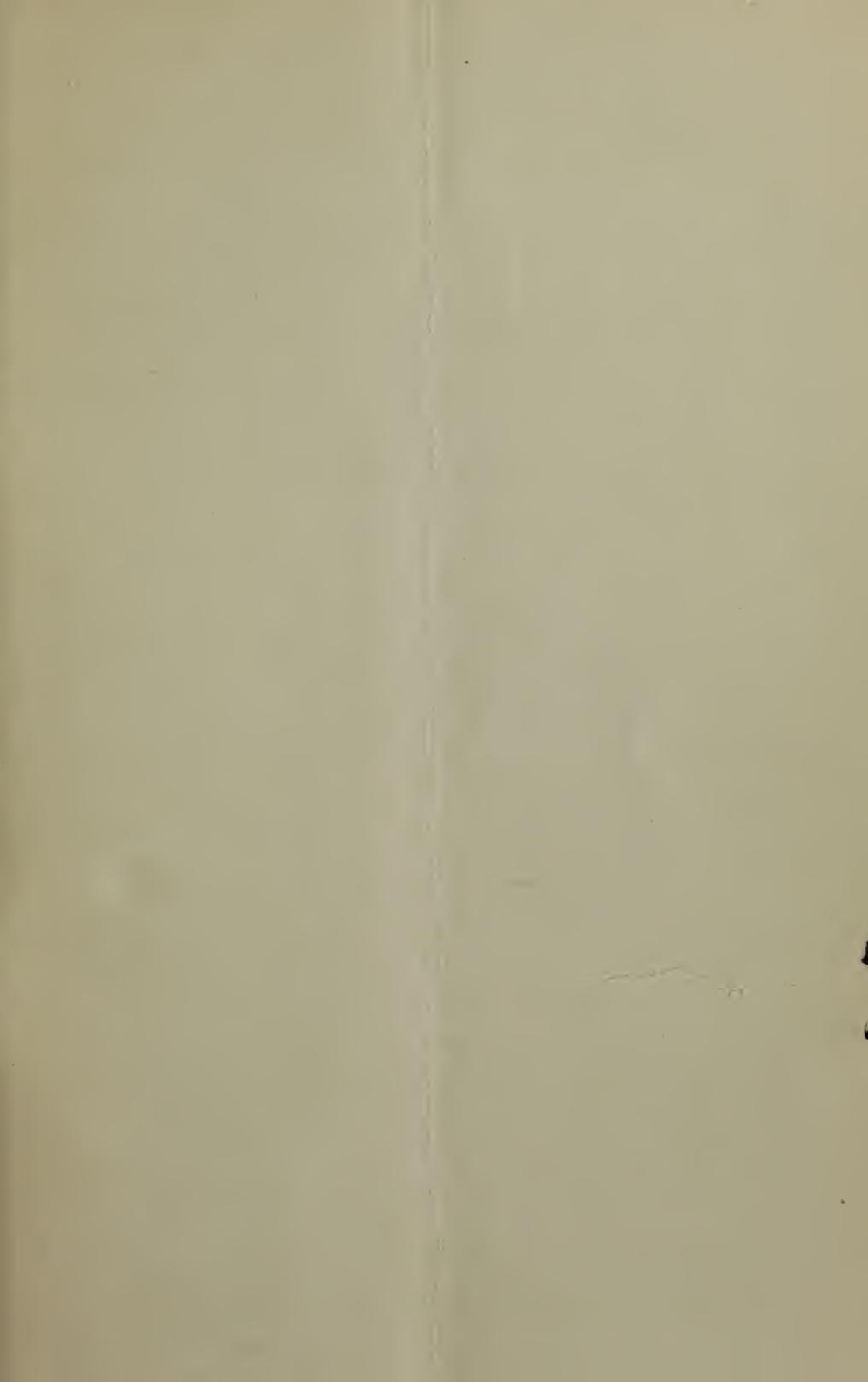
Life is a refined mode of motion, feeding on Matter which it first builds up; then separates; but neither creates nor destroys.

The organism which either Fire or Life has used and finished with, ceases to exist: grows cold: and becomes inorganic Matter again.

The Matter on which both these modes of motion feed is the same, and the Energy which each of them displays was originally derived from the Sun.

But Fire was a mode of motion on the earth before Life appeared, and Life did not appear until Fire had disappeared.

In view, then, of the fact that from beginning to end the movements of these two modes of motion are so remarkably alike, and that the one succeeded the other, we may infer that Life is the refined energy of Fire produced by Evolution.





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